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[Back to Autism Archives](#)

[Close Window](#)

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Contents:

- Autism and Communication
 - Practical Tips for Teachers
 - Resource List
 - Web-based Resources
-

Autism and Communication

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Difficulties in language and communication are defining characteristics of students with autism spectrum disorders (DSM-IV, 1994). While the spectrum is wide, ranging from non-verbal to those who talk incessantly about a favorite subject, students with autism spectrum disorders (ASD) experience communication challenges. Therefore, the focus of this autism e-news is to explore the issues related to these challenges. The information offered here will be of most use when enhanced by a more

thorough review of the resources from which it was drawn. Many of the resources listed are available through regional T/TAC libraries and can be borrowed upon request. Visit your regional T/TAC web page for specific library loan information. Website resources are also provided.

Communication Impairment Characteristics Associated with Autism

Regardless of what level of speech is present, individuals along the spectrum display challenges with communication. Some general characteristics may include the following:

- Delay in or lack of expressive language skills
- Poor comprehension of spoken and written language
- Lack of responsiveness when addressed
- Impairments in nonverbal communication, such as use of gestures, facial expression, eye contact and imitation
- Differences in pitch, intonation, rate, rhythm, and/or stress. Some individuals with autism may demonstrate monotone, or distinctly rhythmical speech
- Repetitive or idiosyncratic language
- Echolalia
- Pronoun reversals
- Restricted vocabulary, dominated by nouns. The majority of speech may be to make requests or rejections
- Perseveration on a topic, or changes topics frequently
- Difficulty interpreting abstract concepts
- Difficulty initiating conversation, using rules, maintaining a topic, interrupting and /or rigidity. The student with autism may demonstrate a stereotype routine way of interacting.
- Difficulty comprehending verbal information, remembering a sequence, or connecting ideas.
- Difficulty attending to relevant cues, sharing attention, or shifting attention from one stimulus to the next.
- May demonstrate strength in speech production and vocabulary, but have significant difficulty carrying on a conversation or using speech for social interactive purposes

<http://www.sasked.gov.sk.ca/k/pecs/se/pub.html>

Communication Goals and Systems

Communication goals for students with ASD should be individualized and reflective of the abilities and needs of the students. Individualized goals are formulated through the collaboration of the student, parents, teacher, and related service professionals. The implementation of the student's

language goals should not be viewed as the sole responsibility of the speech and language pathologist, but should be program-wide goals that are aimed at teaching functional language skills in a variety of social contexts.

As noted in the last e-news, Autism e-news, September, 2003, visual presentation of messages greatly enhances communication for persons with autism. According to Hodgdon, educator and visual strategies author, individuals with autism are 90% visual learners (Hodgdon, 1995). Similarly, Temple Grandin, an adult professor and author with ASD, reports that she thinks in pictures (Grandin, 1995). Such evidence indicates that communication for students with autism should not be limited to verbal exchanges. Visual supports enhance communication by allowing students to comprehend more clearly what is being communicated. They also help to lessen student frustration and anxiety. There are a multitude of means by which visual strategies can be incorporated into the classroom. Depending upon a student's needs, visual supports may include drawings, pictures, pictures paired with written text, or just written text.

One effective means of increasing verbal communication for students with autism is scripting (Gray, 2000). A verbal and/or written script serves as a model and is then practiced over and over before using it in an actual situation. Some examples of scripted conversations include greetings, ordering food, shopping, or work exchanges. The use of social stories, developed by Carol Gray, can also equip students with language needed in various social settings and interactions (Gray). Turn-taking cards, "wait" and "help" cards, comic strip conversations, videotaping have also been shown to be effective strategies in enhancing communication and social skills. <http://www.cesa7.k12.wi.us/sped>

Some students with ASD may need the support of augmentative communication systems. There are a variety of systems, ranging from sign language, object or picture exchange, picture/text communication boards, or automated devices with speech output. A brief description of some of these systems follows.

Object and Picture Exchange Communication Systems

While working in the University of Delaware Autism Program, Lori Frost and Dr. Andy Bondy worked to create a system that focused primarily on developing "initiating" in students with ASD. Desiring for students to be less prompt dependent, and to be initiators, rather than only imitators, they developed a Picture Exchange System, now commonly known as PECS (Frost & Bondy, 1994).

In PECS, the student gives a picture of a desired item to a communicative partner in exchange for that item. Systematic training begins with the student, a physical prompter and the communicative partner. The communicative partner draws attention to an item, the physical prompter assists the child in giving a picture of the item, and then the child receives the item. The physical prompting is gradually faded with errorless learning so that eventually the child initiates the picture exchange for a desired item.

Pictures or real object exchange systems have been shown to be effective in creating a functional communication system for many students. Such meaningful visual exchanges provide the student with

opportunities to see and experience communication. Picture and/or object exchange systems are most beneficial when the symbols used are readily available (e.g., keeping food pictures on the refrigerator or cabinet doors, recreation pictures on storage cabinet doors). Visual exchange systems have also been shown to be an effective bridge to more complicated or symbolic types of communication, such as words (Frost & Bondy, 1994).

Line drawings, magazine cut-out pictures, or actual photographs can serve as symbols in a picture exchange system. The symbols most commonly used for picture communication are the Mayer-Johnson Picture Communication Symbols. They are available both in hard copy and through a software program called Boardmaker®. Boardmaker is a user-friendly program with over 3000 picture communication symbols that are available in color or black and white and can be accompanied by text. Another software program to use for students who may have trouble understanding line drawings is Picture This. This program offers over 2,700 real photos from numerous categories.

<http://www.cesa7.k12.wi.us/sped>

Sign Language

Acknowledging that many students with ASD depend more on what they see than what they hear, some teachers have opted to teach and use sign language with their students. Utilizing the child's imitation skills and physical prompts, signs are modeled and then consistently repeated so that the student can make an association between a desired object and its sign. Sign language has been correlated with decreasing frustration and disruptive behavior in some children with ASD who had no other means to communicate (Sundberg, 1995).

Using signs as a primary communication mode for students with ASD poses some significant limitations. Those who do not know sign language or who may not be able to interpret the idiosyncratic means by which a child with ASD signs will not be able to respond to the child's communicative attempts. Similarly, fine motor development in students may impact their ability to imitate and produce signs and gestures. Communication may be more reflective of the student's fine motor capability than actual receptive and expressive language capability. Finally, fluent signing is as abstract means to communicate as is using words. While some signs parallel the item they represent, there are many that do not (Sundberg, 1995).

Voice Output Communication Aids

The use of voice output communication systems can enhance communication training by providing auditory feedback to the student. Requesting, commenting, behavior management, as well as curricular adaptations can be addressed through the use of voice output communication aids (VOCAs). These devices can be very appealing to students and therefore provide the motivation to participate and focus on various skills successfully. A few of these devices are listed below:

BIG MACK: A single switch/button device available from Able Net that allows for 20 seconds of recording time. This switch allows a student to participate in group activities by recording a short message, or repetitive phrase, such as "Brown Bear, Brown Bear, what do you see?"

Voice in a Box: A multi-message battery operated communication device available in 16, 24, or 40 messages/buttons from Frame Technologies.

Talk Pad: A four message/button battery operated device that allows for 15 seconds of recording time per button from Frame Technologies. This device is useful as an expressive communication device and also to program a series of 1-4 step directions.

Cheap Talk 4: A four message/button device which allows for 5 seconds of record time per button from Enabling Devices.
<http://www.outersound.com>

Language Master: The Language Master is an electronic device about the size of a standard tape recorder. Cards of about 3 x 8 inches with a recordable strip across the bottom are played through the language master. A short verbal message can be recorded on each card. The cards are big enough to include corresponding visual cues if desired.

While many students are motivated by VOCAs, it should be noted that they are not effective for all children with autism. A student may repeatedly push down buttons on a device for self-stimulating purposes rather than for the cause/effect of a communicative message. VOCAs may be best utilized as a part of a student's communication training to help focus attention and increase participation, but they may not be viewed as a primary or sole communication mode.
<http://www.cesa7.k12.wi.us/sped>

Language and Communication Teaching Strategies

Beyond choosing an effective and functional communication system, teachers of students with ASD must decide how to teach language and communication skills. Treatment and Education of Autistic and related Communication handicapped CHildren (TEACCH), a statewide program in North Carolina to serve people with autism and developmental disorders, has developed a set of principles to guide structured teaching of communication. They include accessing and using a communication system that is individualized, meaningful, and motivating; decreasing traditional focus on speech as the only accepted communication system; and, using assessment as the foundation for appropriate programming. Behavioral problems are also viewed as a breakdown in receptive and/or expressive communication.

TEACCH maintains that there are several functions of communication. They are: requesting, getting attention, rejecting/refusal, commenting, giving information, seeking information, expressing feeling, and social routines, (expressions, such as "Hi," "bye," "thank you"). Components of the TEACCH structured approach to teaching communication include:

- Creating individualized goals for each student
- Starting at a concrete level, and increasing the rate of learning to a more abstract level as skills are mastered.
- For beginning level students, focus is on engagement and the building of strong routines as they will create communication incentives. A basic premise of TEACCH is "You don't have to speak to be heard."
- Developing choice making, rejecting appropriately, seeking

attention, and other problem-solving skills in naturally occurring instances and environments.

Using visual supports to teach abstract concepts and social communication

- TEACCH advocates that the communication system a student is learning be easy to use, meaningful, and highly motivating. Of utmost importance is that the student experience success when communicating.
- TEACCH recognizes language as a process. The teacher's role is to model the type of communication desired but to be respectful of all initiations so that communication remains successful and motivating. Finally, for successful language mastery,
- TEACCH maintains that verbal skills should be taught in context through routines that provide consistent, repetitive opportunities for learning. They should be primarily student initiated and driven and should always be reinforcing exchanges for the student.
<http://www.teacch.com>

Applied Verbal Behavior Analysis (AVBA) is another widely used strategy for teaching language and communication skills to students with ASD. Drawing upon the principles of applied behavioral analysis, AVBA combines six critical components:

- Analysis of verbal operants: echoics, mands, tacts and intraverbals.
- Discrete Trial Training (DTT): This consists of an Sd, (the direction of the teacher), a response by the student, and a consequence. Several discrete trials are conducted within a teaching situation, and training is usually conducted at a table or workstation.
- Natural Environment Training: This focuses on the child's immediate interests and is conducted in the natural environment rather than at the table.
- Establishing Operations: This includes using items for motivation and the use of motivational moments.
- Using specific teaching procedures, including errorless learning

Staff using AVBA are trained to respond from moment to moment changing the behavior and responses of the student by applying principles of the science of applied behavior analysis. Because the implementation of these principles is very specific and requires more explanation than could be included in a publication such as this, readers are directed to the following websites for more comprehensive information regarding AVBA:

<http://aba-materials.com>
<http://groups.yahoo.com/group/DTT-NET>
<http://www.jerichoschool.org>
<http://www.calstatela.edu/faculty/zlowenk/>
<http://www.christinaburakaba.com>

Practical Tips for Educators

Twenty practical classroom tips for teaching language to students with ASD

1. Develop interaction and communication within the environment the student actually communicates. Plan teaching around high-interest materials, activities and routines.
2. Use modeling, physical prompts, visual cues, and reinforcement to facilitate attention, imitation, and interaction. Remember students are primarily visual learners. Always provide visual supports. The student can decide whether or not they are needed. Use visual, rather than verbal, cueing.
3. Set up communication opportunities to encourage expression. This might range from creating situations to encourage requests for food, objects, or help, or situations to encourage negotiation, such as refusal, or protesting.
4. Provide choices. Making a choice is one of the earliest, and most critical aspects of communication. Provide continuous opportunities for choice making throughout the student's day.
5. Use augmentative communication systems to support and enhance the student's ability to tell something. Such systems can be appropriate for both the non-verbal student, and the student who has limited verbal expression. (See following articles for descriptions of augmentative communication systems).
6. Use language that is clear, simple and concise.
7. Remember that oral information is transient. Once it is said, the message is no longer available. Consider using visual supports as they can be examined for as long as needed.
8. Teach listening. Do not assume the student has this skill!
9. For some students, it may be necessary to talk more slowly, or to pause between words to allow the student time to process the information.
10. Do not assume that a student's ability to repeat back information indicates that it has been comprehended. Avoid long strings of information, and check often for understanding.
11. Teach new vocabulary in a variety of contexts.
12. Teach appropriate opening comments.
13. Teach to seek assistance when needed.
14. Use a child's echolalia as a starting point for further communication. While parroted, functional language skills can be taught to the child who is echolaic.
15. Model and teach the social use of language through comic strip conversations and/or social stories.
16. Encourage informal and formal social exchanges during the day.
17. Teach conversational skills in small group settings.

18. Teach rules and cues regarding turn taking, when to reply, interrupt, or change the topic.
19. Use audiotaped and vide-taped conversations to teach language skills.
20. Provide multiple opportunities across multiple settings, and within the community to practice the language skills learned.

www.sasked.gov.sk.ca/k/pecs/sepub.html

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initiating positive interactions and improving educational opportunities.
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Maurice, C. (1993). *Let me hear your voice.* New York: Ballantine Books.

Quill, K.A. (1995). *Teaching children with autism: Strategies to enhance communication and socialization.* New York: Delmar Publishers, Inc.

Sundberg, M. (1998). *Teaching language to children with autism or other developmental disabilities.* Pleasant Hill, CA: Behavioral Analysts.

Internet Resources

There are numerous websites that contain information about autism spectrum disorders. The following are offered as a starting point.

Association for Applied Behavior Analysis

<http://www.abainternational.org/>

Autism Society of America

<http://www.autism-society.org>

Center for the Study of Autism

<http://www.autism.org>

Division TEACCH (Treatment and Education of Autistic and related Communication handicapped Children)

<http://www.unc.edu/depts/teacch>

Journal of Autism and Developmental Disorders

<http://www.kluweronline.com>

National Association for Autism Research

<http://www.naar.org>

Online Asperger Syndrome Information and Support (O.A.S.I.S.)

<http://www.udel.edu.bkirby/asperger/>

<http://www.simplifiedsigns.org/> (A simplified system of 500 signs is proposed to enhance the communication abilities of hearing, but nonspeaking, autistic, mentally retarded, and aphasic individuals, as well as their caregivers. The system contains formationally modified signs originally collected from more than 20 formal sign language dictionaries, and invented signs for the specific needs of the special populations).

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Just send them to <http://www.ttac.odu.edu/esubs/forms/autism.htm>